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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,276	04/03/2001	Matthew P.J. Baker	GB 000044	3764

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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
MATTIS, JASON E	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/825,276	BAKER ET AL.	
	Examiner	Art Unit	
	Jason E Mattis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5 and 7-18 is/are rejected.

7)☒ Claim(s) 6 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 03 April 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12/10/01.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because of the following informalities:

Figure 3 of the drawings illustrates a method using reference numerals. A short description or written label of each step in the method is required in the Figure to accompany the reference numerals.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

Page 7 line 25 of the disclosure references "boundary 302" of Figure 4. This reference does not match the drawings, as there is no reference number 302 in Figure 4. Further, reference number 302 is used in Figure 3 to describe a step in the method. Either the drawings or the description should be amended to more clearly reference the "boundary" in Figure 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-4, 7, 9, 13, 15, and 17 are rejected under 35 U.S.C. 102(a) as being anticipated by Park et al. (WO 00/08706).

With respect to claim 1, Park et al. discloses a method of operating a radio communication system having a downlink channel for transmission by a primary station to one or more secondary stations and an uplink random access channel for

transmission from the or each secondary station to the primary station **(See page 1 lines 13-22 and Figure 1 of Park et al. for reference to a base station, which is a primary station, transmitting downlink reference pilot channels and other channels to a mobile station, which is a secondary station, that transmits uplink access channels, reverse pilot channels, and other channels to the base station)**. Park et al. also discloses the secondary station transmitting an uplink signal on the random access channel giving an indication of the radio channel characteristics **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the mobile station generating an access channel message including the received strength of the pilot channel signal, which is a radio channel characteristic, to the base station on an access channel in step 216)**. Park et al. further discloses the primary station transmitting a signal on the downlink channel at a power level which takes into account the indicated radio channel characteristics **(See page 7 liens 8-23 and Figure 2 of Park et al. for reference to the base station sending signals on the forward link channel with the initial transmission power determined based on the indicated radio channel characteristics in step 220)**.

With respect to claim 2, Park et al. discloses a method of operating a radio communication system having a downlink channel for transmission by a primary station to one or more secondary stations and an uplink random access channel for transmission from the or each secondary station to the primary station **(See page 1 lines 13-22 and Figure 1 of Park et al. for reference to a base station, which is a primary station, transmitting downlink reference pilot channels and other**

channels to a mobile station, which is a secondary station, that transmits uplink access channels, reverse pilot channels, and other channels to the base station). Park et al. also discloses the secondary station transmitting an uplink signal on the random access channel **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the mobile station generating an access channel message including the received strength of the pilot channel signal to the base station on an access channel in step 216)**. Park et al. further discloses that the uplink signal can be used by the primary station to determine the prevailing radio channel characteristics of the random access channel **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the base station using the signal sent in step 216 to determine the signal strength of the random access channel in step 218)**. Park et al. also discloses in response to determining the radio channel characteristics, transmitting a signal on the downlink channel at a power level which takes into account the determined radio channel characteristics **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to, in step 220, the base station sending signals on the forward link channel to the mobile station with the initial transmission power determined in step 218)**.

With respect to claim 3, Park et al. discloses that the primary station transmits a signal including an indication of the transmitted power level **(See page 6 lines 12-21 of Park et al. for reference to the base station transmitting a reference pilot signal to the mobile stations with a fixed power, meaning the transmitted power level is indicated to the mobile stations since all reference pilot signals are transmitted**

with the fixed power). Park et al. also discloses the secondary station receiving the signal, measuring the received signal strength determines the channel characteristic of the downlink, and transmits a signal including an indication of the channel characteristic on the random access channel **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the mobile station receiving the fixed forward link pilot channel signal sent in step 212, measuring the received signal strength in step 214, and transmitting an access channel message including the received strength to the base station on an access channel in step 216)**.

With respect to claim 4, Park et al. discloses that the primary station transmits a signal including an indication of the transmitted power level **(See page 6 lines 12-21 of Park et al. for reference to the base station transmitting a reference pilot signal to the mobile stations with a fixed power, meaning the transmitted power level is indicated to the mobile stations since all reference pilot signals are transmitted with the fixed power)**. Park et al. also discloses that the secondary station measures the received signal strength and transmits a signal including an indication of the received signal strength on the random access channel **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the mobile station receiving the fixed forward link pilot channel signal sent in step 212, measuring the received signal strength in step 214, and transmitting an access channel message including the received strength to the base station on an access channel in step 216)**.

With respect to claim 7, Park et al. discloses that the channel characteristics comprise the radio attenuation characteristic **(See page 7 lines 8-23 and Figure 2 of**

Park et al. for reference to the mobile station determining the received signal strength of the pilot signal and the total received power of the entire signals, which indicate a radio attenuation characteristic, in step 214, and transmitting an access channel message including the received strength to the base station on an access channel in step 216).

With respect to claim 9, Park et al. discloses that the uplink signal comprises a message part of the random access channel signal **(See page 7 liens 8-23 and Figure 2 of Park et al. for reference to the uplink signal sent from the mobile station to the base station in step 216 comprising a message part of the access channel signal).**

With respect to claim 13, Park et al. discloses a radio communication system comprising a primary base station having transceiving means for transmitting signals on a downlink channel and at least one secondary station having transceiving means for transmitting uplink signals to the primary station on a random access channel **(See page 1 lines 13-22 and Figure 1 of Park et al. for reference to a base station, which is a primary station, transmitting downlink reference pilot channels and other channels to a mobile station, which is a secondary station, that transmits uplink access channels, reverse pilot channels, and other channels to the base station).** Park et al. also discloses the secondary station having a means for determining the prevail radio characteristics of the random access channel and for transmitting these characteristics to the primary station **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the mobile station receiving the fixed forward link pilot**

channel signal sent in step 212, measuring the received signal strength, which is a radio channel characteristic, in step 214, and transmitting an access channel message including the received strength to the base station on an access channel in step 216). Park et al. further discloses the primary station having means responsive to the receipt of the radio channel characteristic for determining the power level of a downlink signal in dependence on the radio channel characteristics **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the base station using the signal sent in step 216 to determine the signal strength of the random access channel in step 218 and for reference to in step 220, the base station sending signals on the forward link channel to the mobile station with the initial transmission power determined in step 218)**.

With respect to claim 15, Park et al. discloses a secondary station comprising transceiving means for receiving downlink signals from a primary station and for transmitting uplink signals on a random access channel **(See page 1 lines 13-22 and Figure 1 of Park et al. for reference to a base station, which is a primary station, transmitting downlink reference pilot channels and other channels to a mobile station, which is a secondary station, that transmits uplink access channels, reverse pilot channels, and other channels to the base station)**. Park et al. also discloses a means for determining the prevailing radio channel characteristics and for transmitting these characteristics to the primary station **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to the mobile station receiving the fixed forward link pilot channel signal sent in step 212, measuring the received signal**

strength, which is a radio channel characteristic, in step 214, and transmitting an access channel message including the received strength to the base station on an access channel in step 216).

With respect to claim 17, Park et al. discloses a primary station comprising transceiving means for transmitting signals on a downlink channel to at least one secondary station and for receiving uplink random access channel signals **(See page 1 lines 13-22 and Figure 1 of Park et al. for reference to a base station, which is a primary station, transmitting downlink reference pilot channels and other channels to a mobile station, which is a secondary station, that transmits uplink access channels, reverse pilot channels, and other channels to the base station).** Park et al. also discloses the uplink signals including indicia useable for determining the prevailing radio channel characteristics of the random access channel and means responsive to the indicia for determining the power level to transmit downlink signals to the at least one secondary station **(See page 2 lines 8-23 and Figure 2 of Park et al. for reference to using information sent from a mobile station, in step 216, to determine radio channel characteristics and an initial transmission power for a signal to be sent to the mobile station in step 218).**

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Cao et al. (EP 0 913 957 A1).

With respect to claim 5, Park et al. discloses the secondary station transmitting a message containing an indication which can be used by the primary station to determine the prevailing radio channel characteristic in response to receiving a transmission from the primary station **(See page 2 lines 8-23 and Figure 2 of Park et al. for reference to the mobile station transmitting an access channel message in step 216 that contains the received strength of the pilot signal in response to receiving the pilot channel signal in step 212)**. Park et al. does not disclose the secondary station transmitting an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station.

With respect to claim 5, Cao et al., in the field of communications, discloses a secondary station transmitting an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station **(See column 1 paragraph 2 of Cao et al. for reference to a mobile end-user device, which is a secondary station, broadcasting a request signal at increasing power levels until acknowledged by the base station)**. A secondary station transmitting an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station has the advantage of not

creating an excess amount of interference by beginning transmission at a relatively low power so that other secondary stations in communication with the primary station do not get overpowered by the access preamble signal.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Cao et al., to combine a secondary station transmitting an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station, as suggested by Cao et al., with the power control system and method of Park et al., with the motivation being to not create an excess amount of interference by beginning transmission at a relatively low power so that other secondary stations in communication with the primary station do not get overpowered by the access preamble signal.

With respect to claim 8, Park et al. does not disclose that the secondary station determines the signal to interference ration of a signal transmitted by the primary station and includes an indication of the determined SIR in a signal transmitted on the random access channel.

With respect to claim 8, Cao et al., in the field of communications, discloses a secondary station determining the SIR of a signal transmitted by a primary station and including the SIR in a signal transmitted to the primary station **(See column 4 paragraph 14 of Cao et al. for reference to a mobile station measuring the SIR of the broadcast control channel of the base station and for reference to the mobile station sending a random access channel request including information on the SIR measurement)**. A secondary station determining the SIR of a signal transmitted by

a primary station and including the SIR in a signal transmitted to the primary station has the advantage of reducing the processing at the primary station by calculating the SIR at each of the secondary stations and transmitting the result to the primary station.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Cao et al., to combine a secondary station determining the SIR of a signal transmitted by a primary station and including the SIR in a signal transmitted to the primary station, as suggested by Cao et al., with power control system and method of Park et al., with the motivation being to reduce the processing at the primary station by calculating the SIR at each of the secondary stations and transmitting the result to the primary station.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Oberholtzer et al. (U.S. Pat. 5465399).

With respect to claim 10, Park et al. discloses that the random access channel includes the transmission of access preambles by the secondary station **(See page 7 lines 8-23 and Figure 2 of Park et al. for reference to transmitting access channel messages, which are access preambles on the access channel)**. Park et al. does not disclose that the access preambles are encoded with a selected one of a plurality of signatures and that the signature is chose according to a quantity to be signaled.

With respect to claim 10, Oberholtzer et al., in the field of communications, discloses encoding an access preamble with a selected signature and choosing the signature according to a quantity to be signaled **(See column 7 lines 35-48 of**

Oberholtzer et al. for reference to encoding the signal to noise ratio and including the encoded SNR in a message, where the encoded SNR is based on the SNR quantity). Encoding an access preamble with a selected signature and choosing the signature according to a quantity to be signaled has the advantage of being able to represent a quantity as a code, which takes up fewer bits that transmitting the exact quantity, meaning less bandwidth is used to signal the quantity.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Oberholtzer et al., to combine encoding an access preamble with a selected signature and choosing the signature according to a quantity to be signaled, as suggested by Oberholtzer et al., with the power control system and method of Park et al., with the motivation being to be able to represent a quantity as a code, which takes up fewer bits that transmitting the exact quantity, meaning less bandwidth is used to signal the quantity.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Kim et al. (U.S. Pat. 6249515).

With respect to claim 11, Park et al. does not disclose that the random access channel comprises a plurality of sub-channels and that a sub-channel is selected in accordance with a quantity to be signaled.

With respect to claim 11, Kim et al., in the field of communications, discloses a random access channel comprising a plurality of sub-channels and choosing a sub-channel based on the data to be signaled **(See column 4 lines 10-63 and Figures 2-3**

of Kim et al. for reference to splitting a random access channel into a plurality of sub-channels and uses the different sub-channels to signal different data quantities). A random access channel comprising a plurality of sub-channels and choosing a sub-channel based on the quantity to be signaled has the advantage of allowing a quantity of message type to be conveyed from a secondary station to a primary station without using any data bits of a random access channel message, by allowing the primary station to recognize a signaled quantity based on the sub-channel used to send the random access channel message.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Kim et al., to combine a random access channel comprising a plurality of sub-channels and choosing a sub-channel based on the quantity to be signaled, as suggested by Kim et al., with the power control system and method of Park et al., with the motivation being to allow a quantity of message type to be conveyed from a secondary station to a primary station without using any data bits of a random access channel message, by allowing the primary station to recognize a signaled quantity based on the sub-channel used to send the random access channel message.

9. Claims 12, 14, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Belcher et al. (U.S. Pat. 5920287) and in further view of Cao et al.

With respect to claims 12, 14, 16, and 18, Park et al. does not disclose that the transmission preamble is offset by a number of chip periods corresponding to a quantity to be signaled

With respect to claims 12, 14, 16, and 18, Belcher et al. discloses a primary station determining a signaled quantity based a chip offset of a signal from a secondary station **(See the abstract and column 8 lines 21-42 of Belcher et al. for reference to determining the chip offset of a signal from a tag, which is a secondary station, received at a receiver, a primary station, to determine the distance, which is a quantity, from the tag to the receiver)**. A primary station determining a signaled quantity based a chip offset of a signal from a secondary station has the advantage of allowing a quantity of message type to be conveyed from a secondary station to a primary station without using any data bits of a random access channel message, by allowing the primary station to recognize a signaled quantity based on the chip offset of the random access channel message.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Park et al., to combine a primary station determining a signaled quantity based a chip offset of a signal from a secondary station, as suggested by Belcher et al., with the power control system and method of Park et al., with the motivation being to allow a quantity of message type to be conveyed from a secondary station to a primary station without using any data bits of a random access channel message, by allowing the primary station to recognize a signaled quantity based on the chip offset of the random access channel message.

With respect to claim 12, 14, 16, and 18, the combination of Park et al. and Belcher et al. does not disclose that the random access channel is a CDMA channel.

With respect to claim 12, 14, 16, and 18, Cao et al., in the field of communications, discloses a random access channel that is a CDMA channel **(See column 3 paragraph 11 of Cao et al. for reference to using the CDMA communication protocol)**. Using a random access channel that is a CDMA channel has the advantage of using a coded spread spectrum signal to efficiently channelize signals and efficiently use an available bandwidth.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Cao et al., to combine a random access channel that is a CDMA channel, as suggested by Cao et al., with the power control system and method of Park et al. and Belcher et al., with the motivation being to use a coded spread spectrum signal to efficiently channelize signals and efficiently use an available bandwidth.

Allowable Subject Matter

10. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jem

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600